



PATENT  
Docket No.: 19603/2420 (CRF D-2354)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Stewart et al.	)	Examiner:
			)	Unknown
Serial No.	:	09/822,080	)	
Cnfrm. No.	:	8901	)	Art Unit:
			)	1638
Filed	:	March 30, 2001	)	
For	:	CABBAGE PROTEINASE INHIBITOR	)	
		GENE CONFERS RESISTANCE AGAINST	)	
		PLANT PESTS	)	

STATEMENT IN ACCORDANCE WITH 37 C.F.R. § 1.821(g)

Commissioner for Patents  
Washington, D.C. 20231  
**Box: Missing Parts**

Sir:

In accordance with 37 C.F.R. § 1.821(g), applicants hereby submit a Sequence Listing (7 pages) on paper and on a computer readable 3.5" Diskette. Applicants submit that the contents of the Sequence Listing in paper form and in computer readable form are the same. This submission contains no new matter.

Respectfully submitted,

Dated: October 26, 2001

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Registration No. 30,727

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**Certificate of Mailing - 37 CFR 1.8(a)**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:  
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10/26/01  
Date

Jo Ann Whalen  
Jo Ann Whalen



OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/822,080

DATE: 04/19/2001

TIME: 12:30:11

pp 4-5

Input Set : A:\C2420011.app

Output Set: N:\CRF3\04192001\I822080.raw

Does Not Comply  
Corrected Diskette Needed

C/C

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3 <110> APPLICANT: Stewart Jr., C. Neal
4   Broadway, Roxanne M.
6 <120> TITLE OF INVENTION: CABBAGE PROTEINASE INHIBITOR GENE CONFERS RESISTANCE
7   AGAINST PLANT PESTS
9 <130> FILE REFERENCE: 19603/2420
11 <140> CURRENT APPLICATION NUMBER: US/09/822,080
12 <141> CURRENT FILING DATE: 2001-03-30
14 <160> NUMBER OF SEQ ID NOS: 12
16 <170> SOFTWARE: PatentIn Ver. 2.1
18 <210> SEQ ID NO: 1
19 <211> LENGTH: 809
20 <212> TYPE: DNA
21 <213> ORGANISM: Brassica oleracea
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24 <221> NAME/KEY: source
25 <222> LOCATION: (1)..(809)
26 <223> OTHER INFORMATION: Serine proteinase inhibitor
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30 cgctggacca gttctcgaca ctgatggtga tatcataitc gacggcagtt actacgttct 120
31 cccctcctc tggggcccta cagggtggcg cctaactctc gtctcccgtc gtggcaacca 180
32 gtgtccctc tttatcggac aggagcgttc agagggtcaac aggggcattc ccgtgaaatt 240
33 ctcaaaactg aggtccagag ttgggttcgt ccccgaaaga gagaacctca acatcaagat 300
34 ggatgtcgaa cctacgatct gcgctcagtc agcttattgg tgggtcactc cagccccag 360
35 tccctggagg tcgttggtca tagcgcctgg tctaagcca gaagctggag gagaagattc 420
36 gtcgaggagt ttcttcacaga tcaagaaaac tgaagccaaa cttaacgctt acaagtttgt 480
37 attctgtagt gagggtaacg attgcatcga tgcggtaaa aacgaggaag gtggcggttcg 540
38 gggtttggt ttaggtcteta cgccaccatt cgctacccca ttcgagggtg tggtcgtgaa 600
39 agctactggg acagacactt catccaagac tatgtctatt atctgagaga aattaaagac 660
40 cacttaataa agaggataag tgttataact tacctctaata aataaaactc tatctatgta 720
41 tgatgttttc ttgttccatc gatcatcatc atgtatggaa taaaacatct ttcttttgtt 780
42 tctaaaaaaa aaaaaaaaaa aaaaaaaaaa 809
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46 <211> LENGTH: 214
47 <212> TYPE: PRT
48 <213> ORGANISM: Brassica oleracea
50 <220> FEATURE:
51 <221> NAME/KEY: PEPTIDE
52 <222> LOCATION: (1)..(214)
53 <223> OTHER INFORMATION: Serine proteinase inhibitor
55 <400> SEQUENCE: 2
56 Met Asn Pro Met Phe Tyr Phe Leu Leu Ala Phe Thr Thr Val Leu Ala
57   1           5           10           15
59 Ala Thr Ala Asn Ala Gly Pro Val Leu Asp Thr Asp Gly Asp Ile Ile
60   20           25           30
62 Phe Asp Gly Ser Tyr Tyr Val Leu Pro Leu Ile Trp Gly Pro Thr Gly
63   35           40           45

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Input Set : A:\C2420011.app

Output Set: N:\CRF3\04192001\I822080.raw

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65 Gly Gly Leu Thr Leu Val Ser Arg Arg Gly Asn Gln Cys Pro Leu Phe
66      50                      55                      60
68 Ile Gly Gln Glu Arg Ser Glu Val Asn Arg Gly Ile Pro Val Lys Phe
69 65                      70                      75                      80
71 Ser Asn Trp Arg Ser Arg Val Gly Phe Val Pro Glu Glu Glu Asn Leu
72                      85                      90                      95
74 Asn Ile Lys Met Asp Val Glu Pro Thr Ile Cys Ala Gln Ser Ala Tyr
75      100                      105                      110
77 Trp Trp Val Thr Pro Ala Pro Ser Pro Trp Arg Ser Leu Phe Ile Ala
78      115                      120                      125
80 Ala Gly Pro Lys Pro Glu Ala Gly Gly Glu Asp Ser Ser Arg Ser Phe
81      130                      135                      140
83 Phe Gln Ile Lys Lys Thr Glu Ala Lys Leu Asn Ala Tyr Lys Phe Val
84 145                      150                      155                      160
86 Phe Cys Ser Glu Gly Asn Asp Cys Ile Asp Val Gly Lys Asn Glu Glu
87      165                      170                      175
89 Gly Gly Val Arg Gly Leu Val Leu Gly Ser Thr Pro Pro Phe Ala Thr
90      180                      185                      190
92 Pro Phe Glu Val Val Phe Val Lys Ala Thr Gly Thr Asp Thr Ser Ser
93      195                      200                      205
95 Lys Thr Met Ser Ile Ile
96      210
99 <210> SEQ ID NO: 3
100 <211> LENGTH: 216
101 <212> TYPE: PRT
102 <213> ORGANISM: G. max (soybean)
104 <220> FEATURE:
105 <221> NAME/KEY: PEPTIDE
106 <222> LOCATION: (1)..(216)
107 <223> OTHER INFORMATION: Kunitz-type trypsin inhibitor 3
109 <400> SEQUENCE: 3
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111 1                      5                      10                      15
113 Ser Tyr Leu Pro Ser Ala Ile Ala Asp Phe Val Leu Asp Asn Glu Gly
114      20                      25                      30
116 Asn Pro Leu Glu Asn Gly Gly Thr Tyr Tyr Ile Leu Ser Asp Ile Thr
117      35                      40                      45
119 Ala Phe Gly Gly Ile Arg Ala Ala Pro Thr Gly Asn Glu Arg Cys Pro
120      50                      55                      60
122 Leu Thr Val Val Gln Ser Arg Asn Glu Leu Asp Lys Gly Ile Gly Thr
123 65                      70                      75                      80
125 Ile Ile Ser Ser Pro Tyr Arg Ile Arg Phe Ile Ala Glu Gly His Pro
126      85                      90                      95
128 Leu Ser Leu Lys Phe Asp Ser Phe Ala Val Ile Met Leu Cys Val Gly
129      100                      105                      110
131 Ile Pro Thr Glu Trp Ser Val Val Glu Asp Leu Pro Glu Gly Pro Ala
132      115                      120                      125
134 Val Lys Ile Gly Glu Asn Lys Asp Ala Met Asp Gly Trp Phe Arg Leu
135      130                      135                      140

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137 Glu Arg Val Ser Asp Asp Glu Phe Asn Asn Tyr Lys Leu Val Phe Cys
138 145                      150                      155                      160
140 Pro Gln Gln Ala Glu Asp Asp Lys Cys Gly Asp Ile Gly Ile Ser Ile
141                      165                      170                      175
143 Asp His Asp Asp Gly Thr Arg Arg Leu Val Val Ser Lys Asn Lys Pro
144                      180                      185                      190
146 Leu Val Val Gln Phe Gln Lys Leu Asp Lys Glu Ser Leu Ala Lys Lys
147                      195                      200                      205
149 Asn His Gly Leu Ser Arg Ser Glu
150 210                      215
153 <210> SEQ ID NO: 4
154 <211> LENGTH: 218
155 <212> TYPE: PRT
156 <213> ORGANISM: Brassica napus
158 <220> FEATURE:
159 <221> NAME/KEY: PEPTIDE
160 <222> LOCATION: (1)..(218)
161 <223> OTHER INFORMATION: BdD22 drought-induced proteinase inhibitor
163 <400> SEQUENCE: 4
164 Met Lys Thr Phe Phe Leu Val Thr Leu Leu Ala Ala Ala Val Cys
165 1 5 10 15
167 Thr His Gly Arg Glu Gln Val Lys Asp Ser Asn Gly Asn Pro Val Lys
168 20 25 30
170 Arg Gly Ala Lys Tyr Phe Ile Gln Pro Ala Lys Ser Asn Ala Gly Gly
171 35 40 45
173 Leu Val Pro Ala Ala Ile Asn Leu Leu Pro Phe Cys Pro Leu Gly Ile
174 50 55 60
176 Thr Gln Thr Leu Leu Pro Tyr Gln Pro Gly Leu Pro Val Ser Phe Gly
177 65 70 75 80
179 Tyr Glu Pro Val Ile Val Gly Thr Asp Tyr Ile Tyr Thr Ser Thr Thr
180 85 90 95
182 Ile Asn Ile Glu Phe Glu Ser Asp Ile Trp Pro Val Cys Asn Glu Leu
183 100 105 110
185 Ser Lys Leu Trp Ala Val Asp Val Ser Ser Ser Ala Ala Lys Glu Pro
186 115 120 125
188 Ala Ile Ile Ile Gly Gly Glu Ser Thr Ala Pro Asn Ser Leu Phe Lys
189 130 135 140
191 Ile Glu Glu Ala Thr Glu Ala Asn Thr Tyr Lys Leu Thr Thr Ser Tyr
192 145 150 155 160
194 Gly Thr Val Gly Thr Ile Pro Gly Pro Trp Leu Ser Ala Pro Gln Leu
195 165 170 175
197 Ile Val Thr Asn Asp Glu Ser Lys Thr Leu Phe Val Lys Phe Val Lys
198 180 185 190
200 Val Asp Asp Ala Ala Thr Lys Ala Thr Thr Ser Thr Ser Arg Val Glu
201 195 200 205
203 Lys Leu Gly Leu Lys Met Phe Pro Phe Tyr
204 210 215
207 <210> SEQ ID NO: 5
208 <211> LENGTH: 17

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Input Set : A:\C2420011.app  
Output Set: N:\CRF3\04192001\I822080.raw

209 <212> TYPE: PRT  
210 <213> ORGANISM: Brassica oleracea  
212 <220> FEATURE:  
213 <221> NAME/KEY: PEPTIDE  
214 <222> LOCATION: (1)..(17)  
215 <223> OTHER INFORMATION: BoPI peptide  
217 <400> SEQUENCE: 5  
218 Val Leu Asp Thr Asp Gly Asp Ile Ile Phe Asp Gly Ser Tyr Tyr Val  
219 1 5 10 15  
221 Leu  
225 <210> SEQ ID NO: 6  
226 <211> LENGTH: 37  
227 <212> TYPE: PRT  
228 <213> ORGANISM: Artificial Sequence  
230 <220> FEATURE:  
231 <223> OTHER INFORMATION: Description of Artificial Sequence: Kunitz  
232 inhibitor family amino-terminal conserved region  
234 <220> FEATURE:  
235 <221> NAME/KEY: PEPTIDE  
236 <222> LOCATION: (1)..(37)  
237 <223> OTHER INFORMATION: Xaa at any position is any amino acid  
239 <400> SEQUENCE: 6  
240 Leu Ile Val Asp Xaa Asp Xaa Glu Asp Asn Thr Tyr Asp Gly Arg Lys  
241 1 5 10 15  
243 His Asp Glu Asn Gln Xaa Leu Ile Val Met Xaa Xaa Xaa Xaa Xaa Tyr  
244 20 25 30  
W--> 246 Xaa Leu Ile Val Met  
247 35  
250 <210> SEQ ID NO: 7  
251 <211> LENGTH: 21  
252 <212> TYPE: DNA  
253 <213> ORGANISM: Artificial Sequence  
255 <220> FEATURE:  
256 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic  
257 ~~peptides~~ *This is a nucleotide sequence*  
259 <400> SEQUENCE: 7  
260 ggcagttact acgttctccc c 21  
263 <210> SEQ ID NO: 8  
264 <211> LENGTH: 18  
265 <212> TYPE: DNA  
266 <213> ORGANISM: Artificial Sequence  
268 <220> FEATURE:  
269 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic  
270 ~~peptides~~ *same error*  
272 <400> SEQUENCE: 8  
273 cgataggggt agcgaatg 18  
276 <210> SEQ ID NO: 9  
277 <211> LENGTH: 20  
278 <212> TYPE: DNA

## RAW SEQUENCE LISTING

DATE: 04/19/2001

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TIME: 12:30:11

Input Set : A:\C2420011.app

Output Set: N:\CRF3\04192001\I822080.raw

279 <213> ORGANISM: Artificial Sequence  
281 <220> FEATURE:  
282 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic  
283 ~~peptides~~  
285 <400> SEQUENCE: 9  
286 acgaccaatt tacagcccag 20  
289 <210> SEQ ID NO: 10  
290 <211> LENGTH: 23  
291 <212> TYPE: DNA  
292 <213> ORGANISM: Artificial Sequence  
294 <220> FEATURE:  
295 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic  
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298 <400> SEQUENCE: 10  
299 gttgtacaaa cgcttcctc agc 23  
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304 <212> TYPE: DNA  
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308 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic  
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312 atttggggaa tctttggtcc 20  
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317 <212> TYPE: DNA  
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320 <220> FEATURE:  
321 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic  
322 ~~peptides~~  
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325 acagtacgga ttgggtagcg 20

## VERIFICATION SUMMARY

DATE: 04/19/2001

PATENT APPLICATION: US/09/822,080

TIME: 12:30:12

Input Set : A:\C2420011.app

Output Set: N:\CRF3\04192001\I822080.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number  
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:240 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6  
L:243 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6  
L:246 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6